

## CLAIM OR CLAIMS

1. A testing system for determining at least one of wear and a drag force between a media and a test sample, the testing system comprising a testing terminal having a reciprocating first drive and a first load sensor for applying and measuring a first force between the media and the test sample along a first axis, and a second drive and a second load sensor for applying and measuring a second compressive force between the media and the test sample along a different second axis.
2. The testing system of Claim 1, wherein at least one of the first drive and second drive has a variable stroke length.
3. The testing system of Claim 1, wherein both the first drive and the second drive have a variable stroke length.
4. The testing system of Claim 1, wherein at least one of the first drive and second drive has a variable stroke frequency.
5. The testing system of Claim 1, wherein both the first drive and second drive have a variable stroke frequency.
6. The testing system of Claim 1, wherein at least one of the first drive and the second drive is selected to provide a variable compressive force.
7. The testing system of Claim 1, further comprising a central controller operably connected to the testing terminal for recording data from the testing terminal corresponding to the first force and the second force.
8. The testing system of Claim 7, further comprising a plurality of testing terminals operably connected to the central controller.
9. The testing system of Claim 1, further comprising a central controller operably connected to the testing terminal for controlling at least one a stroke length and a stroke frequency of the first drive and the second drive.
10. The testing system of Claim 1, further comprising a central controller operably connected to the testing terminal for controlling a stroke length and a stroke frequency of the first drive and the second drive.

11. The testing system of Claim 1, further comprising a central controller operably connected to the testing terminal, the central controller configured to determine a drag force between the media and the test sample.

12. The testing system of Claim 1, further comprising a central controller operably connected to the testing terminal, the central controller configured to adjust a drag force by an inertia compensation.

13. The testing system of Claim 1, further comprising a central controller operably connected to the testing terminal, the central controller configured to control a contact path between the media and the test sample.

14. The testing system of Claim 1, further comprising a central controller operably connected to the testing terminal, the central controller configured to control an applied force between the media and the test sample along a contact path.

15. The testing system of Claim 1, further comprising a central controller operably connected to the testing terminal, the central controller configured to determine a drag force between the media and the test sample along at least a portion of a contact path between the media and the test sample.

16. The testing system of Claim 1, further comprising a housing enclosing at least one of the first drive and the second drive, the housing forming a thermal barrier between an interior of the housing and an exterior of the housing.

17. A testing system for determining at least one of wear and a drag force between a media and a test sample, the testing system comprising:

(a) a plurality of testing terminals, each testing terminal providing a compressive load signal and a drag force signal between a corresponding media and test sample; and

(b) a central controller operably connected to each of the testing terminals for recording at least a drag force corresponding to each of the testing terminals.

18. The testing system of Claim 17, wherein the central controller controls a contact path between the media and the test sample.

19. The testing system of Claim 17, wherein each testing terminal includes a reciprocating first drive and a first load sensor for applying and measuring a first force

between the media and the test sample along a first axis, and a second drive and a second load sensor for applying and measuring a second compressive force between the media and the test sample along a different second axis.

20. The testing system of Claim 17, wherein the central controller controls at least one a stroke length and a stroke frequency of each of the testing terminals.

21. The testing system of Claim 17, wherein the central controller controls a stroke length and a stroke frequency of each of the testing terminals.

22. The testing system of Claim 17, wherein the central controller adjusts the drag force by an inertial compensation.

23. The testing system of Claim 17, wherein the central controller controls a contact path between the media and the test sample.

24. The testing system of Claim 17, wherein the central controller controls an applied force between the media and the test sample along a contact path.

25. A testing system for determining at least one of wear and a drag force between a media and a test sample, the testing system comprising:

- (a) a drive assembly providing motion along two axes of travel;
- (b) a mounting arm connected to the drive assembly for movement along the two axes of travel, the mounting arm including a common fitting and a hand clamp for applying a clamping force across a portion of the common fitting; and
- (c) a plurality of media mounts for engaging the mounting arm, each media mount having a cooperative fitting for engaging the common fitting in a predetermined and reproducible position, each media mount having a different media mounting interface.

26. The testing system of Claim 25, further comprising a housing enclosing the drive assembly and a portion of the mounting arm, the housing forming a thermal barrier between an interior of the housing and an exterior of the housing.

27. A method of determining at least one of wear and a drag force between a media and test sample, the method comprising:

- (a) simultaneously providing reciprocating motion along a first axis between the media and the test sample at each of a plurality of testing terminals;

(b) exerting a controlled applied force along a second axis between the media and the test sample at each of the plurality of testing terminals; and

(c) providing a signal from each of the testing terminals corresponding to a drag force between the media and the test sample at each testing terminal.

28. The method of Claim 27, further comprising monitoring the signal from each testing terminal to determine the drag force between the media and the test sample at each testing terminal.

29. The method of Claim 27, further comprising adjusting a determination of a drag force between the media and the test sample by an amount corresponding to a mass of a media mount at a corresponding testing terminal.

30. A method of determining at least one of wear and a drag force between a media and a test sample, the method comprising:

(a) controlling each of a stroke length, a stroke frequency and a loading force for reciprocating motion between the media and the test sample; and

(b) providing a signal corresponding to a drag force between the media and the test sample.

31. The method of Claim 30, further comprising calculating a drag force from the signal.

32. The method of Claim 31, further comprising adjusting the calculated drag force by an inertia compensation.

33. The method of Claim 30, further comprising varying at least one of the stroke length, the stroke frequency and the loading force in response to the signal corresponding to a drag force.